



**UNITED STATES DEPARTMENT OF COMMERCE
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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
08/823,744	03/25/97	SALESKY	J 17648-2

LM02/0804
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EXAMINER

CHUN, K
ART UNIT PAPER NUMBER
2756 i)

DATE MAILED:

08/04/99

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.
08/823,744

Applicant(s)

Salesky et al

Examiner

Kerry Chun

Group Art Unit

2756



☐ Responsive to communication(s) filed on _____.

☐ This action is **FINAL**.

☐ Since this application is in condition for allowance except for formal matters, **prosecution as to the merits is closed** in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire 3 month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

Disposition of Claims

☒ Claim(s) 1-22 is/are pending in the application.

Of the above, claim(s) 18-21 is/are withdrawn from consideration.

☐ Claim(s) _____ is/are allowed.

☒ Claim(s) 1-17 and 22 is/are rejected.

☒ Claim(s) 3 and 4 is/are objected to.

☒ Claims 1-22 are subject to restriction or election requirement.

Application Papers

☒ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

☐ The drawing(s) filed on _____ is/are objected to by the Examiner.

☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.

☒ The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

☐ All ☐ Some* ☐ None of the CERTIFIED copies of the priority documents have been

☐ received.

☐ received in Application No. (Series Code/Serial Number) _____.

☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

*Certified copies not received: _____.

☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

☒ Notice of References Cited, PTO-892

☒ Information Disclosure Statement(s), PTO-1449, Paper No(s). 1, 7

☒ Interview Summary, PTO-413

☒ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Notice of Informal Patent Application, PTO-152

--- SEE OFFICE ACTION ON THE FOLLOWING PAGES ---

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DETAILED ACTION

1. This application has been examined. Original claims 1-22 are pending. The objections and rejections cited are as stated below:

Election/Restriction

2. Restriction to one of the following inventions is required under 35 U.S.C. 121:

I. **Claims 1-17 and 22**, drawn to a network conferencing system and methods of sharing data among clients and networks with varied capabilities and capabilities, classified in class 709, subclass 204.

II. **Claims 18-19**, drawn to a capture frame apparatus for capturing a frame image from a computer display, classified in class 345, subclass 433.

III. **Claims 20-21**, drawn to a method for capturing a frame image from a source computer and transporting the image data to a destination computer and classified in class 345, subclass 511.

3. The inventions are distinct, each from the other because of the following reasons: Inventions I, II, and III are related as subcombinations disclosed as usable together in a single combination. The subcombinations are distinct from each other if they are shown to be separately usable. In the instant case, invention I has separate utility such as the ability to handle

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arbitrary streams of data and transport them at varying speeds. Invention II also has separate utility such as the ability to translate user input to bound the frame image and display the boundary as a transparent window on the display. Invention III also has separate utility such as the ability to copy image data based on where the image data is in transcodable form. All of the above inventions are subcombinations usable together, and are functionally distinct, through disparate methods of operation. See MPEP § 806.05(d).

4. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

5. During a telephone conversation with Mr. Philip Albert (35,819) on 7/30/99, a provisional election was made without traverse to prosecute the invention of Group I, **claims 1-17 and 22**. Affirmation of this election must be made by applicant in replying to this Office action. **Claims 18-21** are withdrawn from further consideration by the examiner in accordance with 37 CFR 1.142(b), as being drawn to a nonelected invention.

Specification

6. The specification is objected to because of the following informalities.

A. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed. The following title is suggested:
Real-Time, Multi-Point, Multi-Speed, Multi-Stream Scalable Computer Network

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Communications System for Reducing Latency by Dynamically Varying Quality of Service in Accordance with Client Capabilities and Network Conditions

B. Page 3, Line 3, "commuications" should be changed to --communications--.

C. Page 4, Line 24, "these codecs may be in form of software" should be changed to --these codecs may be in the form of software--.

D. Page 18, Line 8, "capatured" should be changed to --captured--.

E. Page 18, Line 9, "the reference copy is a copy of who the captured image looked" should be changed to --the reference copy is a copy of how the captured image looked--.

F. Page 18, Line 13, "only block is captured from the current image" should be changed to --only block B6 is captured from the current image--.

7. The above objections are merely illustrative and do not represent all errors contained in the specification. Applicants are expected to proofread the specification and make all necessary corrections.

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Claim Objections

8. **Claims 3 and 4** are objected to because of the following informalities:

A. **Claim 3**, "sending dynamic data to plurality of clients" should be --sending dynamic data to a plurality of clients--.

B. **Claim 4**, "dropping intermediate data updates at the client node when intermediate update cannot be handled" should read --dropping intermediate data updates at the client node when the intermediate updates cannot be handled--.

9. The above objections are merely illustrative and do not represent all errors contained in the specification. Applicants are expected to proofread the claims and make all necessary corrections.

Drawings

10. The drawings are objected to because of the objections noted on the PTO-948 form attached. Correction is required.

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Claim Rejections - 35 USC § 102

11. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371© of this title before the invention thereof by the applicant for patent.

12. **Claims 1-14, 16, 17, and 22** are rejected under 35 U.S.C. 102(e) as being anticipated by Shaw et al, U.S. Patent No. 5,706,290 (hereafter referred to as Shaw).

13. Regarding **claim 1**, *a conferencing system comprising: at least one client; a conference server; network connections between the conference server and the at least one client, wherein each client maintains a version of a shared portion of a display which is updated at a rate dependent on the network connections and loads and client computing speeds and loads*, Shaw discloses a computer conferencing system comprising a network communications processor which performs conference control [Col. 9, Lines 30-40] and a host processor with [eight (8) different network interface modes 306. The first interface mode 310 is for 9.6 Kbs analog modems. The second interface mode 312 is for 16 Kbs ISDN D channel. The third network interface mode 314 is for 19.2 Kbs high speed analog modems. The fourth network interface mode 316 is for 56 Kbs digital network (PSDN). The fifth network interface mode 318 is for 64 Kbs ISDN single B channel. The sixth network interface mode 320 is for dual B channel 128 Kbs ISDN BRI network. The seventh network interface mode 322 is for 384 Kbs ISDN H1 network

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and the eighth network interface mode 324 is for 1.544 Mbs ISDN PRI or T1 network, Col. 6, Lines 5-20], thereby functioning as a server to the clients connected to said nodes; and wherein [it is necessary for the multimedia assembly to continuously monitor the processor and network band width availability and to simultaneously determine the amount of compression or decompression that is required with respect to the data in frame memory 314 to be transmitted, Col. 5, Lines 10-15]. By this rationale, **claim 1** is rejected.

14. Regarding **claim 2**, Shaw discloses *a conferencing system comprising: at least one client; a conference server; network connections between the conference server and the at least one client, wherein each client maintains a version of a shared portion of a data set which is updated at a rate dependent on the network connections and loads and client computing speeds and loads*. As noted in claim 1, Shaw teaches a conference system for transmitting multimedia information over computer networks. Since all information processed by computers are stored as collections of data, this system maintains a data set for the shared multimedia. By this rationale, **claim 2** is rejected.

15. Regarding **claim 3**, Shaw teaches *a computer network system for sending dynamic data to a plurality of clients of differing capabilities, comprising: a server; a plurality of intermediate servers each connected to the server; and a plurality of clients connected to the plurality of intermediate servers, each client connected to an intermediate server, where each intermediate server includes a means for analyzing data streaming from the server and means for dropping elements of the data stream based on network load and speed and downstream client load and*

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speed to maintain a substantially real-time data stream, [as a result of the aforesaid plurality of band widths, it is necessary for the multimedia assembly to continuously monitor the processor and network band width availability and to simultaneously determine the amount of compression or decompression that is required with respect to the data in frame memory 314 to be transmitted, Col. 5, Lines 10-20]. Many video compression methods use lossy compression, which drop elements of the data stream. By this rationale, **claim 3** is rejected.

16. Regarding **claim 4**, *a method of sharing dynamic data between multiple nodes on a network where the dynamic data is updated at a rate dependent on the network connection speed and load and the node computing speed and load, the method comprising the steps of: outputting data from a source node in an output data type selected from base uncompressed data, base compressed data, differenced uncompressed data and differenced compressed data, wherein the output data type is selected based on the network connection speed and load and the source node computing speed and load; inputting data to a destination node in an input data type selected from base uncompressed data, base compressed data, differenced uncompressed data and differenced compressed data, wherein the input data type is selected based on the network connection speed and load and the destination node computing speed and load*, Shaw teaches differenced data, [during the interframe coding mode 278, after the incoming media articles are received, the appropriate frame size 262 will be adjusted first, frame by frame difference 264 will then be calculated. For consecutive frame processing, an appropriate motion vector 270 can be derived. For selective frame processing, due to the difficulty to identify a suitable motion

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vector 270, interpolation techniques 266 can be employed to simulate frame difference signal. Decision logic 272 is employed to analyze situation and make a final decision, Col. 5, Lines 30-45], and compressed data [the scalable memory array is particularly suitable to progressive encoding of images when band width needs to be conserved. The scalable memory array will choose the coarser modified CIF format to transmit the initial frames and then utilize a larger modified CIF format to send subsequent frames such that the complete image sequence will gradually be upgraded to the original CIF quality, Col. 14, Lines 35-45] and selecting between these based on network conditions [the band width manager 1300 function is to constantly monitor the network to detect abrupt network band width changes caused by local line degradation or network traffic congestion. The band width manager 1300 will respond by adjusting the media combinations to accommodate the available band width, Col. 18, Lines 45-55];

when the output data type is different from the input data type, transforming the output data from the output data type to the input data type, Shaw discloses [assembly 112 makes it possible to exchange a multitude of different forms of media objects over a wide range of communication networks, Col. 3, Lines 15-20];

dropping intermediate data updates at a network connection between the source node and the destination node, when an intermediate update cannot be handled at the network connection speed and load; and dropping intermediate data updates at the client node when intermediate update cannot be handled at the client computing speed and load, Shaw teaches that when line

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conditions degrade, some frames would not be transmitted [option 2 would be to drop the frame update rate and increase the interpolation rate 574 ... pixel processor 206 can request for an retransmission or host processor 218 can delete the complete macro block 477 and wait until the next macro block is sent, Col. 10, Lines 25-40]. By this rationale, **claim 4** is rejected.

17. Regarding **claim 5**, *the method of claim 4, wherein the steps of dropping intermediate data are steps of dropping intermediate data selectively such that the dropped data is overwritten by later data in less than a predetermined time*, Shaw teaches the use of the MPEG standard for multimedia [Col. 2, Lines 10-15]. MPEG specifies the periodic inclusion of I-frames as reference points in the data stream. Since these are periodic, they are sent within a predetermined time. By this rationale, **claim 5** is rejected.

18. Regarding **claim 6**, *the method of claim 4, wherein the data updates are image deltas, the data to be updated is image data and the data is periodically checkpointed to nondelta image portions*, Shaw teaches the use of MPEG [Col. 2, Lines 10-15]. MPEG uses differential encoding of images (B and P-frames). MPEG also specifies the periodic inclusion of I-frames (non-differential). By this rationale, **claim 6** is rejected.

19. Regarding **claim 7**, Shaw discloses *the method of claim 4, wherein multiple transformations are done as needed to keep the data stream matched to a display of a client and for real-time compression* [due to the variable bandwidth or throughput requirement for each transmission network, only dedicated processor approaches have been shown in the prior art to meet a specific bandwidth performance. For example, three video conferencing techniques are

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required at the 112 Kbs, 384 Kbs and 1.544 Mbs bandwidth range. The multimedia assembly disclosed herein, includes different transceiver pairs for each specific network type. The system architecture disclosed herein, and in particular, host processor 218 in conjunction with bandwidth controller 260 unit, scaler 258 and reconfiguration unit 256, can continuously adapt to a variety of network and processor bandwidth changing situations, for example, noisy local line condition and network traffic congestion. This is possible as a result of the scalable memory architecture which permits the continuous reprogramming of the internal file format of frame memory 214 so that it is suitable for the specific bandwidth requirement at that moment, Col. 5, Lines 15-35].

By this rationale, **claim 7** is rejected.

20. **Claim 8**, *the method of claim 4, further comprising a step of determining whether a transformation of a data element in the data stream is needed at a node to keep the stream matched to a client display parameter or to transform the data to keep the data being received by the destination node being received substantially in real-time*, is similar to claim 3 and is rejected on the same basis.

21. Regarding **claim 9**, *the method of claim 4, performed by a conference server, at least one presenter client and a plurality of attendee clients*, Shaw discloses [the network communications processor ... interfaced to a local customer premises equipment 534 so as to perform conference control 538, store and forward 540 or band width management 542, Col. 9, Lines 30-40], which functions as a conference server. Conferences have a presenter and may have a plurality of attendees. By this rationale, **claim 9** is rejected.

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22. **Claim 10**, *the method of claim 4, further comprising the steps of analyzing data in the data stream; determining if the data is not going to be used by a downstream client based on the client's update speed and current view space; and if data in the data stream will not be used as determined in the determining step, dropping the data from the data stream*, is similar to claims 3 (analyzing) and 4 (dropping), and is rejected on the same basis.

23. Regarding **claims 11 and 12**, Shaw discloses *the method of claim 4, further comprising a step of dynamically adapting the output data type and input data type to screens and processors used at sources and destinations and to the network connections used;* and *further comprising a step of migrating transcoding processes based on presenter, server and attendee capabilities*, [assembly 112 makes it possible to exchange a multitude of different forms of media objects over a wide range of communication networks. ... However, since video coding algorithms are intrinsically incompatible with each other, there is need for an assembly 112 to provide a common interface whereby incompatible equipment can freely exchange media objects through interfacing with assembly 112, Col. 3, Lines 15-27. It is necessary for the multimedia assembly to continuously monitor the processor and network band width availability and to simultaneously determine the amount of compression or decompression that is required with respect to the data in frame memory 314 to be transmitted, Col. 5, Lines 10-15]. By this rationale, **claims 11 and 12** are rejected.

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24. Regarding **claim 13**, *the method of claim 4, further comprising a step of recording a data stream for later playback*, Shaw teaches an interface with traditional analog storage or transmission techniques [Col. 1, Lines 63-67]. By this rationale, **claim 13** is rejected.

25. Regarding **claim 14**, *the method of claim 13, further comprising a step of recording a voice conversation along with the data stream for later synchronized playback*, Shaw teaches a system wherein [each media object within a category, namely, audio, still image, motion video, text and graphics would be imported to a multiplexer 252 dedicated to each category in order to identify the input signal and then be directed to a dedicated overlay 254 for each category of media object. The overlay 254 provides the ability for the assembly, disassembly, deletion, addition and modification of a selected group of multimedia objects. The input signals, be they audio, still image, motion video, text or graphics, are converted into computer object-oriented language format for encoding into a frame memory 214 as described hereafter. This conversion before storing into frame memory 214 in cooperation with the major components of the system described hereafter, permit the compilation of selected input signals which have been stored in the frame memory 214 to be assembled, interpreted and translated to other system formats with relative ease as a result of the intelligent memory management capability inherent in this design, Col. 3, Lines 50-67]. By this rationale, **claim 14** is rejected.

26. Regarding **claim 16**, *the method of claim 15, wherein the number of frames is dynamic based on changing network and presenter client conditions*, Shaw discloses [the bandwidth manager 1300 function is to constantly monitor the network to detect abrupt network bandwidth

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changes caused by local line degradation or network traffic congestion. The bandwidth manager 1300 will respond by adjusting the media combinations to accommodate the available bandwidth, Col. 18, Lines 45-55]. By this rationale, **claim 16** is rejected.

27. Regarding **claim 17**, *a conferencing client-server system for presenting conferences from a presenter client process to an attendee client process, comprising:*

a plurality of nodes, wherein each node comprises means for building a data structure for showing a conference; a network for connecting each of the plurality of nodes to others of the plurality of nodes, is similar to claim 1 and is rejected on the same basis;

means for adjusting a flow of conference data to each of the plurality of nodes, the flow being adjusted for each node to accommodate the computing resources available at the node and the bandwidth and resources available on the network portion connecting the node, is similar to claim 3 and rejected on the same basis. By this rationale, **claim 17** is rejected.

28. Regarding **claim 22**, Shaw discloses *the method of claim 4, wherein dropped intermediate data updates are updates which are obsoleted by later-arriving data updates sent without notice to the sender subsequent to the dropped intermediate data updates being dropped*, [pixel processor 206 can request for a retransmission or host processor 218 can delete the complete macro block 477 and wait until the next macro block is sent, Col. 10, Lines 35-40]. By this rationale, **claim 22** is rejected.

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Claim Rejections - 35 USC § 103

29. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

30. **Claim 15** is rejected under 35 U.S.C. 103(a) as being unpatentable over Shaw.

31. Regarding **claim 15**, *the method of claim 4, wherein the dynamic data is a conference display, the method further comprising the steps of: dividing a presenter client display into a plurality of frames, wherein the number of frames used for the presenter client display is a function of network capacity and presenter client computation resources*, is similar to claim 11 and is rejected on the same basis;

comparing each frame in a current display with a corresponding frame in a prior display to determine which frames of the plurality of frames are changed frames; transmitting changed frames from the presenter client, omitting unchanged frames when necessary to allow a presentation to occur at an attendee client in substantially real-time, Shaw discloses a method for calculating difference frames [Col. 5, Lines 30-45], but does not teach omitting unchanged frames. However, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to omit unnecessary data, such as unchanged frames, in order to reduce network traffic. By this rationale, **claim 15** is rejected.

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Citation of Pertinent Prior Art

32. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

U.S. Patent No. 5,563,649	System and Method for Transmitting Video Material
U.S. Patent No. 5,600,646	Video Teleconferencing System with Digital Transcoding
U.S. Patent No. 5,737,448	Method and Apparatus for Low Bit Rate Image Compression
U.S. Patent No. 5,774,668	System for On-Line Service in which Gateway Computer uses Service Map which includes Loading Condition of Servers Broadcasted by Application Servers for Load Balancing
U.S. Patent No. 5,793,365	System and Method Providing a Computer User Interface Enabling Access to Distributed Workgroup Members
U.S. Patent No. 5,563,649	System for Negotiating Conferencing Capabilities by Selecting a Subset of a Non-Unique Set of Conferencing Capabilities to Specify a Unique Set of Conferencing Capabilities

Conclusion


33. Any inquiry concerning this communication should be directed to Mr. Kerry Chun, whose telephone number is (703) 305-0137. The examiner can normally be reached on Monday through Friday from 8:00 to 4:30. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Frank Asta, can be reached at (703) 305-3817. The fax number for this

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Group is (703) 308-6606. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist, whose telephone number is (703) 305-9600.



FRANK J. ASTA
SUPERVISORY PATENT EXAMINER
GROUP 2700